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For information

Beach Water Quality of Hong Kong in 2003

Introduction

The purpose of this paper is to brief Members on the water quality of gazetted beaches in Hong Kong in 2003.

Background

2. The Environmental Protection Department (EPD) has implemented a monitoring programme to assess the water quality of 41 gazetted beaches in Hong Kong.

3. The beach water quality is assessed through a ranking system which links the water quality of a beach with swimming-associated health risks as measured by the *E. coli* level. According to this system, beaches are ranked as "Good", "Fair", "Poor" or "Very Poor" in accordance with the *E. coli* level. Beaches with annual geometric mean *E. coli* levels below 25 per 100mL are ranked "Good", between 25 and 180 per 100mL, "Fair", and those between 181 and 610 per 100mL, "Poor". Only those in the ranks of "Good" and "Fair" meet the Water Quality Objective (WQO) for bathing water. Beaches ranked "Very Poor" (*E. coli* level exceeding 610 per 100mL which corresponds to a swimming-associated illness rate of more than 15 cases per 1,000 swimmers) are generally considered not suitable for swimming, and therefore beach closure is recommended to safeguard the health of swimmers.

Beach Water Quality in 2003

4. In 2003, the number of gazetted beaches complying with the WQO for bathing water has increased by one to 34, which is about 83% of all gazetted beaches in Hong Kong. Among the 41 gazetted beaches, 23 are ranked "Good", 11 "Fair", one "Poor" and six "Very Poor" (Figure 1). The number of "Good" water quality beaches remained the same as in 2002, i.e. more than half (56.1%) of the gazetted beaches in Hong Kong. All six beaches of "Very Poor" water quality are located along the coast of Tsuen Wan. They were closed to the public in 2003.

5. Since 2002, the water quality of Shek O and Big Wave Bay beaches on the eastern side of the Hong Kong Island has improved significantly as a result of the full implementation of Stage 1 of the Harbour Area Treatment Scheme (HATS) at the end of 2001. Screened sewage from Chai Wan and Tseung Kwan O Preliminary Treatment Works, which was previously discharged into the Tathong Channel has been diverted to the tunnel network of HATS and conveyed to the Stonecutters Island Sewage Treatment Works (SCISTW) for chemical treatment and disposal in the general area of the Victoria Harbour western anchorage.

6. The beaches along the coast of Tsuen Wan continued to have more fluctuating

water quality in 2003. Apart from the potential pollution sources in the unsewered hinterland and the polluted Sham Tseng Nullah, the very poor water quality is also related to the high bacterial level in the marine water off the Tsuen Wan coast.

7. With the full implementation of the HATS Stage 1 at the end of 2001, sewage generated from Kowloon and the north-eastern area of Hong Kong Island, in addition to that from Tsuen Wan, is transferred to the SCISTW for treatment. As a result, the amount of treated effluent discharged to the western anchorage of Victoria Harbour through the interim outfall approximately quadrupled. While this has brought about substantial improvement in water quality in terms of dissolved oxygen, nutrients and *E. coli* in most parts of the Harbour, elevation in *E. coli* level has been observed in the western part of the Harbour. This has raised the *E. coli* levels at the Tsuen Wan beaches (which already suffered from the influence of local pollution source) to a very high level since 2002.

8. A sewage treatment works has been constructed at Sham Tseng and new trunk sewers are being laid, with a view to connecting up the unsewered developments and removing the local pollution sources of the Tsuen Wan beaches. The earliest completion date of local mains sewerage would be in 2007, followed by individual connections of currently unsewered properties to the main sewers. The timing of improvement will depend on the rate at which all such works are progressing. Furthermore, this sewerage work alone is unlikely to completely restore the beach water quality without completion also of the remaining stages of HATS.

9. In view of the rather lengthy time required to bring about improvement in local water quality, Anglers', Approach, Casam, Gemini, Hoi Mei Wan, Lido and Ting Kau are recommended to remain closed in the coming bathing season. Hoi Mei Wan, which was of "Poor" water quality in 2003, is also recommended to remain closed as it is subject to similar sources of pollution as the other six beaches along the Tsuen Wan coast.

Conclusion

10. In 2003, the water quality of most beaches was similar to that in 2002. The implementation of HATS Stage 1 has brought about improvement in water quality of beaches on the eastern side of the Hong Kong Island while the beaches along Tsuen Wan coast had poor to very poor water quality. Since all the planned works and the remaining stages of HATS will take some years to complete, in order to safeguard the health of swimmers, the beaches along the Tsuen Wan coast, namely Anglers', Approach, Casam, Gemini, Hoi Mei Wan, Lido and Ting Kau are recommended to remain closed in the coming bathing season.

Environmental Protection Department
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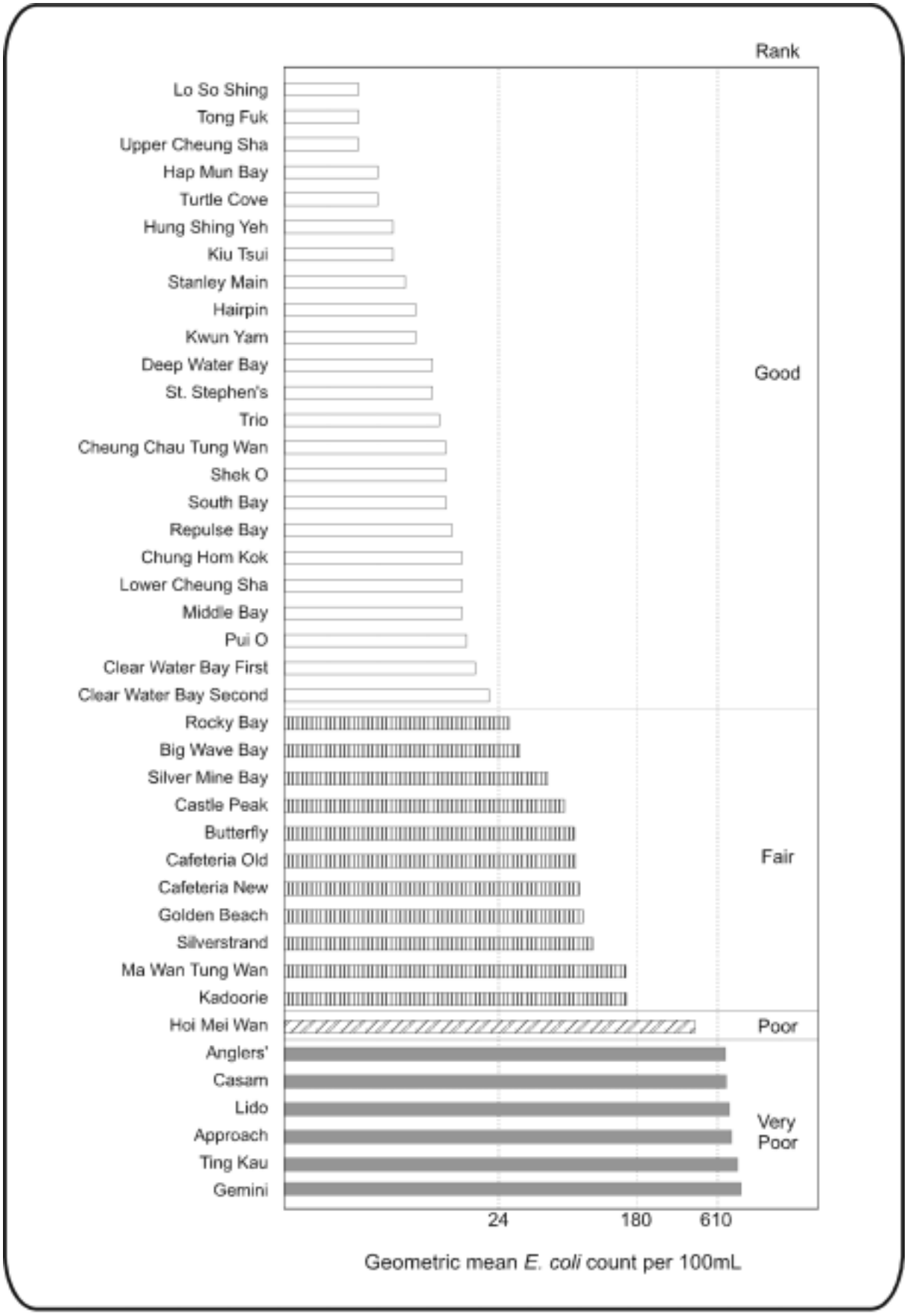

Figure 1 : Annual ranking of gazetted beaches in 2003